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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,206	04/08/2004	Apurv Kamath	GUID.607PA	8656
51294 7590 05/18/2007 HOLLINGSWORTH & FUNK, LLC 8009 34TH AVE S. SUITE 125 MINNEAPOLIS, MN 55425			EXAMINER BUSTAMANTE, ERIK J	
			ART UNIT 3766	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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<b>Office Action Summary</b>	Application No. 10/821,206	Applicant(s) KAMATH ET AL.	
	Examiner Erik J. Bustamante	Art Unit 3766	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-35 and 41-58 is/are rejected.
- 7) ☒ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/8/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 4/8/2004 is in compliance of 37 CFR 1.97. All the references cited are in compliance with the provisions of 37 CFR 1.98. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2,8-9,11,17-19,22-23,25-26,27-30,32,43-58 are rejected under 35 U.S.C. 102(b) as being anticipated by SALO (4,674,518).

Regarding claims 1,5,17,19,22,32, 43,45,49,51,52, and 58 SALO discloses A cardiac monitoring device and corresponding method comprising: a housing (Fig 2); amplification circuitry (36,40, Col 6 lines 31-53) a first electrode arrangement coupled to the first amplifier input (Col 6 lines 31-53; Col 6 lines 54-65) on a lead (Fig 2); a second electrode arrangement coupled to the second amplifier input (Col 6 lines 41-65) on a lead (Fig 2); and a signal processor provided in the housing and coupled to the amplification circuitry, the signal processor configured to separate a source signal using a first composite signal detected at the first input impedance and a second composite

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signal detected at the second input impedance (Col 7 lines 1-30). SALO also discloses a switch (28).

Regarding claims 2, 18, and 57, SALO discloses the second input impedance is adjustable to the first input impedance (Col 6 lines 20-40).

Regarding claim 6, SALO discloses a bipolar electrode arrangement (Col 5 lines 26-55).

Regarding claims 8,9,11,25,26,30, SALO discloses intracardiac placement of the electrode arrangement (Fig 1).

Regarding claim 22 and 23, SALO discloses switching during a cardiac cycle (Col 6 lines 20-65).

Regarding claims 28,46,50, and 55, SALO discloses a filter (Col 7 lines 4-9).

Regarding claims 29, 44,47,53,54, and 56, SALO discloses synchronously sampling (Col 6 lines 20-65).

4. Claims 1,32,35,41 and 51 rejected under 35 U.S.C. 102(b) as being anticipated by GEDDES (5,058,583).

Regarding claims 1,32, and 51, GEDDES discloses a cardiac monitoring device and corresponding method comprising: a housing (36); amplification circuitry (Col 6 lines 59-68) a first electrode arrangement coupled to the first amplifier input (Col 6 lines 23-58) on a lead; a second electrode arrangement coupled to the second amplifier input (Col 6 lines 23-58) on a lead; and a signal processor provided in the housing and coupled to the amplification circuitry, the signal processor configured to separate a source signal using a first composite signal detected at the first input impedance and a

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second composite signal detected at the second input impedance (Col 7 lines 1-15).

The examiner consider the weighted sum of the impedance signals as described by GEDDES to be "seperating a source signal."

Regarding claim 3, GEDDES discloses that both amplifier circuits have about an equal phase response (Col 7 lines 50-68; Col 8 lines 1-5).

Regarding claims 35 and 41, GEDDES discloses that the second input impedance is selected to attenuate a target source signal and that the cardiac signal is seperated using a linear combination (Col 7).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4,20,21,24,33,34,42 rejected under 35 U.S.C. 103(a) as being unpatentable over SALO as applied to claims 1,17,32, and 51 above.

With respect to claims 4,20,21,24,33,34,42, SALO discloses the claimed invention except for the various sampling frequencies and distance between electrodes. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used these values, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

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7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over SALO as applied to claim 5 above.

Regarding claim 6, SALO discloses the claimed invention essentially as described above with the exception of using bipolar electrodes. The examiner takes the position that bipolar electrodes are common in the art and it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used bipolar electrodes for sensing impedances.

8. Claims 7 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over SALO as applied to claims 1 and 17 above, and further in view of DAUM (6,684,101).

Regarding claims 7 and 27, SALO discloses the claimed invention essentially as described above with the exception of providing a housing electrode. DAUM teaches a housing electrode (Col 1 lines 54-67; Col 2 lines 22-33). DAUM expresses as a motivation: "a multiplicity of high frequency voltages are concurrently detected at a multiplicity of body locations in response to the high frequency source current (Col 1 lines 59-61).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of SALO with a housing electrode in light of the teachings of DAUM for the purpose of detecting a multiplicity of frequency voltages.

9. Claims 10 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over SALO as applied to claims 1 and 17 above.

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Regarding claims 10 and 31, SALO discloses the claimed invention essentially as described above with the exception of providing a surface electrode arrangement. The examiner takes the position that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a surface electrode arrangement so as to avoid an implantation procedure but still monitor the heart.

10. Claims 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over GEDDES as applied to claim 1 above, and further in view of KEIMEL et al (5,117,824).

Regarding claims 12 and 14, GEDDES discloses the claimed invention essentially as described above with the exception of providing a sample and hold circuit. KEIMEL teaches that a sample and hold circuit "provides an adjustable threshold (Col 1 lines 23-42)."

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of GEDDES with a sample and hold circuit in light of the teachings of KEIMEL for the purpose of providing an adjustable threshold.

Regarding claim 13, GEDDES discloses a multiplexer (Col 8 lines 14-19).

With respect to claims 15 and 16, GEDDES as modified by KEIMEL renders the claimed invention as obvious except the sampling frequencies used. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used those specific values, since it has been held that

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discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

***Allowable Subject Matter***

11. Claims 36-40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik J. Bustamante whose telephone number is 571-272-8820. The examiner can normally be reached on Mon-Fri (7:30 - 11:30 AM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl H. Layno can be reached on 571-272-4949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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